



BROOKHAVEN BULLETIN

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March 11, 1971

Federal, State And County Officials Meet At Brookhaven

A group of 19 Federal, State and County legislators met at Berkner Hall last Friday to discuss the effects of Brookhaven's budget on current and future research.

Before touring some of the experimental areas, the group was addressed by Deputy Director George Vineyard, whose remarks have been reproduced at the end of this article.

After a tour of BNL's facilities was completed, the group was joined by several Brookhaven staff members at a luncheon, where presentations were made by Dr. George Woodwell of the Biology Department, and Max Small of Plant Engineering and Planning.

Dr. Vineyard's Statement

There is a great deal to see at Brookhaven, and we will only have time to show you some highlights. The total capital investment at Brookhaven is \$250,000,000. About 2,800 scientists, engineers, technicians, and others are employed. The largest single effort is in high-energy physics, and there are also substantial programs in nuclear and solid-state physics, in chemistry, biology, medicine, mathematics, instrument development, and applied science. We are supported principally by the Atomic Energy Commission, and to a small extent by other agencies.

Most people are in the habit of talking rather grandly about how much science has learned and the great power of the technology based on science. Indeed that knowledge and that power are impressive. Occasionally, however, one should reflect on how much more remains to be learned. I believe that man's ignorance is very much more extensive and profound than his knowledge. It has become fashionable to argue that we have too much science, but it is the reverse that is true. Science and technology can be misused, to be sure. They are tools, and any tool can be misused, but it is the misuse, not the tool itself which should be blamed. Solutions to our pressing national problems require more powerful technologies and much deeper knowledge than we have now.

This country is the fortunate possessor of many remarkable facilities for carrying out scientific research and development. The National Laboratories, of which Brookhaven is one, are an important part of that system. Under the financing and progressive sponsorship of the Atomic Energy Commission these Laboratories have been built up over a period of more than 25 years. Oak Ridge, Argonne, Lawrence Radiation Laboratory, Los Alamos, Brookhaven, and others comprise a unique establishment of talent and facilities which are a great national asset. In these laboratories, for example, the deepest questions of the nature of matter have been probed with sophisticated machines. At Brookhaven, we have one of the most powerful devices of this kind in the world, the Alternating Gradient Synchrotron, or AGS. Beneficial applications of nuclear energy and its by-products to industry, technology, and other sciences, including medicine have been found and are continuing to be found at a rapid pace.

At Brookhaven, the AGS is used by our scientists and by scientists and students from universities. New sub-atomic particles have been discovered here, and new principles of physics which underlie the structure of all things. This accelerator is now undergoing modifications which increase its capability for doing research by a large factor.

Our applied scientists work on many things. For example, they have found ways to incorporate radioactive wastes in glass so as to seal them up completely and safely for the long time required for their decay. It is now possible to do this cheaply and routinely. Another group has discovered a way to make concretes that are more than four times as strong as ordinary concrete and much more resistant to corro-

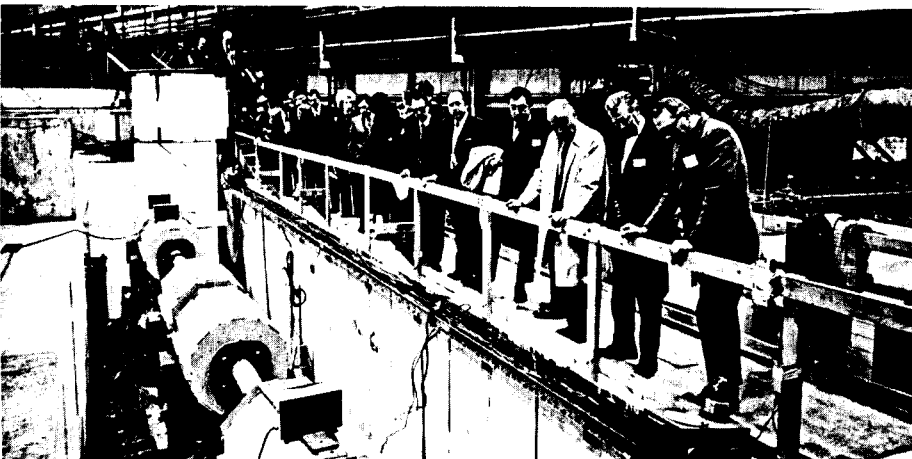
(Continued on page 2)

Legislators Look Us Over

—Photos by Humphrey



Before starting a tour of Brookhaven, Dr. George Vineyard briefed the legislators on the background of Brookhaven and the scope of the research program of the Lab.



Legislators are shown the experimental area of the AGS by Dr. George Wheeler (right) head of the AGS Conversion Group.



In the Medical Department lecture room, Congressman James Grover (right) is briefed by Dr. Lewis Dahl (left). Dr. George Vineyard and Dr. Eugene Cronkite are attentive listeners.

Element 112 Sought In Targets From AGS

A team of British scientists has claimed recently that it has found a superheavy element, ekamercury, in a tungsten target from the CERN synchrotron. In an effort to confirm the British findings, scientists here and abroad have been looking at targets from Brookhaven's AGS for assessment of the British claims.

Because of the great interest in this recently announced hypothesis, Dr. Amnon Marinov of the Hebrew University, Jerusalem, and the Rutherford High Energy Laboratory in England will give a Brookhaven Colloquium on "The Possible Discovery of a Superheavy Element" on Monday, March 15 at 3:30 p.m. in Berkner Hall.

Dr. Marinov is one of the authors of a paper in the Feb. 12, 1971 issue of the British journal Nature that has excited



Gordon Rackett, Accelerator, examines a target similar to the ones that are being analyzed during a search for a new heavy element.

great interest in the scientific world because it reported evidence for an element with atomic number 112, far beyond the range of known elements.

Theoretical considerations have pointed for several years towards the probable existence of a so-called "island of stability" in the neighborhood of elements 110 to 114. In other words, elements in this region are thought to have relatively long half-lives — some perhaps as long as millions of years — whereas the heaviest elements now known, those with atomic numbers 101 to 105, are all very unstable, with half-lives of minutes, seconds or less. Groups all over the world have searched — so far in vain — for the predicted, long-lived, superheavy elements, both in natural materials and in targets bombarded with heavy ions in accelerators. Several heavy-ion accelerators now under construction were specifically designed with the aim of producing the "superheavies."

Now the British team of which Dr. Marinov is a member has reported the very startling and unexpected result that they found element 112 — ekamercury — in a target of tungsten (element 74) bombarded, not with heavy ions, but with 24-GeV protons in the CERN synchrotron. The possibility of producing superheavy elements in such a high-energy proton bombardment had not been seriously considered before, and it is not at all clear in terms of present knowledge of high-energy reactions how such a process can occur. But if it can, the Brookhaven AGS is one of the very few machines in the world in which superheavy-element synthesis is now feasible.

For this reason there has been tremendous interest in highly irradiated AGS

(Continued on page 2)

BNL Lecture Series Reaches 100 Mark Next Wednesday

The Brookhaven Lecture Series, which was inaugurated on November 16, 1960, will offer its hundredth lecture on Wednesday, March 17. Gertrude Scharff-Goldhaber, who introduced the speaker at the first lecture, will deliver a lecture titled "Collective Motions in Atomic Nuclei." Mrs. Goldhaber will be introduced by Joseph Weneser, Chairman of BNL's Physics Department.

In announcing the inauguration of the series in 1960, the Brookhaven Lecture Committee commented, "Most of us at Brookhaven have wondered what the next person, the next laboratory or the next department is doing. What 'they' do affects all of us. We are often prevented from knowing what goes on because each specialty has its own language and the rest of us may not be conversant with it. What we need is plain English by knowledgeable persons so that we can discuss and question and profit. This is the aim of the Brookhaven lecture series. It will also give us a chance to meet each other as scientists and to explore what we have in common, where we differ and how we bear on each other."

At the first lecture, an overflow crowd in the Lecture Hall on Brookhaven Avenue heard Professor Edward Purcell of Harvard University, Nobel Laureate and Research Collaborator at BNL, speak about "Radioastronomy and Communication Through Space."

Dr. Purcell's lecture was later printed as BNL Report Number 658, and was subsequently reprinted twice because of a heavy demand for copies.

"Collective Motions in Atomic Nuclei," will discuss the idea that the neutrons and protons in atomic nuclei are arranged in shells, similar to the electron shells in the atom, was conceived in the early thirties,



Gertrude Scharff-Goldhaber

almost immediately after the discovery of the neutron. However, at that time not enough experimental data were available to give this idea a severe test. During the following years it was found that apart from the well known "Coulomb repulsion" between any two protons (which varies inversely with the square of their distance), the much stronger, but short range, force between two nucleons is charge independent, i.e. this force is the same between two protons, two neutrons, or a proton and a neutron. Because of the Coulomb repulsion, the heavier nuclei contain more neutrons than protons.

In the late forties the accumulated wealth of data made it possible to prove that nuclei with certain "magic numbers" of either type of nucleons are unusually stable. The series of magic numbers is the same for protons and neutrons, namely 2, 8, 20, 28, 50, 82, 126. This discovery supported the shell model in the form of the independent particle model which pictures the nucleus as an even-even "core" in whose spherically symmetric field the nucleons move. In the course of the intervening years the study of nuclear spectra indicated that the nucleons in this even-

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Weekly Calendar

Thursday, March 11

*Particle Physics Seminar

A New Measurement of η_{00}
C. Rubbia, Harvard University
3:00 p.m. - Sm. Seminar Rm. - 20 Penn. St.

Monday, March 15

Biology Seminar

Some Recent Radiobiological Experiments with
Tradescantia Stamen Hairs
Sadao Ichikawa, Kyoto University, Japan
11:00 a.m. - Biology Library - 50 Bell Ave.

A Laboratory-wide Colloquium, sponsored by the Chemistry Department, will be conducted on Monday, March 15, at 3:30 p.m., in Berkner Hall. Dr. Amnon Marinov of Rutherford Laboratory will discuss "Possible Discovery of a Super-heavy Element."

Coffee will be served at 3:00 p.m.

*Tuesday, March 16

Medical Department Seminar

Low Dose Radiation Cancer in Man
Dr. Alice Steward, Oxford University
3:00 p.m. - Berkner Hall - 11 Brkhvn Ave.

*Wednesday, March 17

Chemistry Seminar

Recent Molecular Beam Studies of Chemical Reactions
Yuan T. Lee, University of Chicago
3:30 p.m. - Chem. Sem. Rm. - 33 Lewis Rd.

Brookhaven Lecture Series (No. 100)

Collective Motions in Atomic Nuclei
G. Goldhaber, Physics Dept., Brookhaven National Laboratory
8:00 p.m. - Berkner Hall - 11 Brookhaven Ave.

Thursday, March 18

Solid State Seminar

Spin-Wave Interactions in CrBr_3
J. Sivardiere, Physics Dept., Brookhaven National Laboratory
1:30 p.m. - Sm. Seminar Rm. - 20 Penn. St.

Particle Physics Seminar

A Search and Evidence for NN Bound States
T. Kalogeropoulos, Syracuse University
3:00 p.m. - Sm. Seminar Rm. - 20 Penn. St.

Friday, March 19

Nuclear Physics Seminar

Triumf
Dr. W.C. Olsen, University of Alberta
2:00 p.m. - Sm. Seminar Rm. - 20 Penn. St.

Tuesday, March 23

Medical Department Seminar

Kinetic Studies of Lymphoid Subpopulations
Eugene M. Lance, M.D., Hospital for Special Surgery, New York
3:00 p.m. - Seminar Rm. - 30 Bell Ave.

Physics Colloquium

Muonium and Positronium
V.W. Hughes, Yale University
3:30 p.m. - Seminar Rm. - 20 Penn. St.

Wednesday, March 24

Chemistry Seminar

Ascorbic Acid Free Radicals
Benon Bielski
3:30 p.m. - Chem. Sem. Rm. - 33 Lewis Rd.

Thursday, March 25

Particle Physics Seminar

Results on the A_2 from the Double Vee Spectrometer
K. J. Foley, Brookhaven National Laboratory
11:00 a.m. - Sm. Sem. Rm. - 20 Penn. St.

Solid State Seminar

Neutron Scattering by Rotons in Liquid Helium:
A New Look at an Old Problem
O.W. Dietrich, Physics Dept., Brookhaven National Laboratory
1:30 p.m. - Sm. Sem. Rm. - 20 Penn. St.

*Note changes

FAS to Meet

The BNL Chapter of the Federation of American Scientists will meet at lunchtime in Room "A" at the cafeteria on Friday, March 12th. On the agenda will be proposed local participation in FAS Committees on the Environment and on the Surplus of Scientists and Engineers. The Chapter meetings are open to all interested persons.

County Officials (Continued)

sion. Radiation is used in producing these materials, and many applications are being found for them. By using stable isotopes as tracers we have found a new way to monitor air pollution and to distinguish individual sources of pollution. An active program is going on in which this technique is applied to the oxides of sulfur. We would like to expand the program to the oxides of nitrogen, which are also important pollutants, and widen the regions under observation.

Our biologists study, among other things, the effects of radiation on cells and living organisms. The interesting ecological effects of prolonged and intense radiation of a Long Island forest are being studied.

Back in 1911 a Dutch physicist discovered, quite by accident, that some metals when cooled to very low temperatures, lose all resistance to the passage of electricity. The phenomenon is called superconductivity. It remained a laboratory curiosity and scientific puzzle until recent years, when new substances were discovered that not only were superconductors, but could carry very heavy currents without losing their superconducting property, something which the materials that were known earlier could not do. These new substances allow magnets to be made which are very much stronger than ordinary magnets, and require no power (except for refrigeration) in their operation. Since our accelerators use magnets everywhere, we have set up a group of scientists to push forward this new technology. Not only is this of importance to accelerators, but it is conceivable that electrical machinery and the transmission lines which carry electricity from power plant to consumer could be made of superconductors. This lossless transmission could make very much longer lines economically feasible and would allow them to be placed underground. Suitable sites for power plants would thus be easier to find, and other benefits might be realized. Quite recently we were given a modest grant by the National Science Foundation to design a long-range program of research and development on superconducting and other advanced transmission lines and the related equipment. We foresee important new opportunities in this approach.

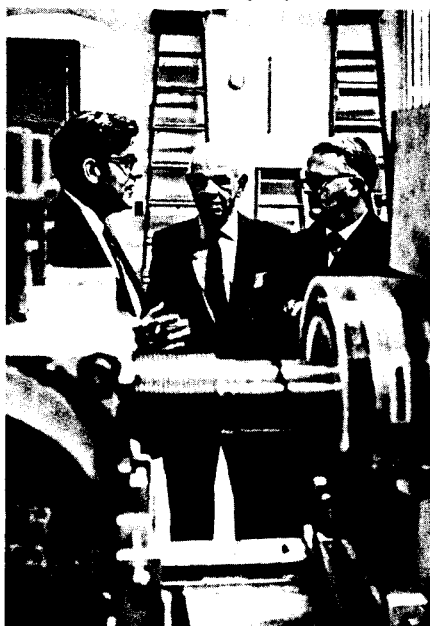
Our medical activities have grown out of our interest in radiation and the existence here of many collateral disciplines of chemistry, instrumentation, physics, etc., which help open new doors in medical science. Human insulin was synthesized for the first time at Brookhaven. The work provides new possibilities for the better management of diabetes. A treatment for Parkinson's disease, a debilitating condition affecting many persons was discovered here, under a program which is now leading into new understandings of neurological diseases in general. Another medical program here has produced promising new understanding of high blood pressure and its causes. Since the advent of antibiotics, bacterial diseases have been in retreat. Some have been routed. Viral diseases, on the other hand, have allowed no such conquest. Recently new substances showing promise for the treatment of viral diseases have become known, and some interesting new examples of these have been synthesized here.

From the beginning, Brookhaven has been a center for the use of nuclear reactors in scientific research. Our High Flux Beam Reactor is our latest. It has been extraordinarily successful in providing intense beams of neutrons for studying the structure of matter. Recently these beams have been used to unravel the complex structures of molecules which have biological or medical interest. We feel that this opens a whole new field of unique and important work.

It is ironic, indeed tragic, that, with all of the country's needs and all of these opportunities, we and many laboratories like us, are being forced by lack of funds to reduce our staffs, curtail or eliminate programs, and fail in the effort to mount new ones. In this situation the injection of relatively small sums can have large effects. Of course, scientific research is not alone in its problem of finding support, and the government faces many difficult problems with funding. However, the country can ill afford to let this kind of work languish, to let the complex teams of specialists which have been assembled to begin falling apart,



Bob Powell, Head of the Reactor Division explains a model of the High Flux Beam Reactor to visiting legislators before they are taken to the experimental floor.



Dr. Fred Mills, Accelerator Department Chairman (left) talks with Leland Haworth (center) and Congressman Grover at the 200-MeV linac.



After giving a presentation at lunch time, Max Small, Manager of Plant Engineering and Planning, talks with a reporter about a proposed waste disposal method.

Lecture Series (Continued)

even core are by no means "inert," but undergo collective motions of intriguing variety. Their precise nature is still not quite unravelled. The search for the understanding of some of these collective phenomena will be described in the lecture.

Gertrude Scharff-Goldhaber, born in Mannheim, Germany, attended the Universities of Munich, Freiburg, Zurich and Berlin, and received her Ph.D. in experimental physics, summa cum laude, from the University of Munich.

She was a Research Assistant at the Physics Department of Imperial College of Science and Technology, London, England, where she worked under G.P. Thompson. In 1939 she married Dr. Maurice Goldhaber, the present Director of Brookhaven, who was at that time on the staff of the University of Illinois.

Mrs. Goldhaber joined the staff of Brookhaven in 1950, and became Senior

Physicist in 1962. Among other topics, Mrs. Goldhaber has worked on spontaneous fission, neutron physics and nuclear decay schemes. Together with her husband, she proved in 1948 the identity of beta-particles with atomic electrons. A great deal of her work is devoted to the study of the systematics of nuclear level schemes, which frequently provides interesting insights into the nature of nuclear structure. She has published a considerable number of scientific papers in this field.

Besides her professional work, Mrs. Goldhaber is interested in the dissemination of scientific information. One of the fruits of this interest are the Brookhaven Lectures, which inform the scientific staff of BNL of researches of particular merit carried out at the Laboratory in either the physical or biological sciences.

Mrs. Goldhaber is a Fellow of the American Physical Society and a member of Sigma Xi. Her two sons, Alfred S. and Michael H., are both theoretical physicists.

Element 112 (Continued)

targets and such targets have, in the past two weeks, been sent to Oak Ridge, Argonne, and the Rutherford High Energy Laboratory where teams of chemists and physicists are searching for evidence for the presence of superheavy elements by a variety of techniques. The nuclear chemists at BNL are meanwhile concentrating on investigating possible processes that might lead to superheavy element formation in high-energy proton bombardment. The only mechanisms that have been thought of involve a two-step process of some kind.

Experiments designed to observe such fast-moving secondary fragments or recoil nuclei are underway here using a variety of techniques. To date, no evidence has been found for fragments of sufficient mass and energy to cause the secondary reactions required to make superheavy elements and the upper limits already set by these BNL experiments cast some doubt on the interpretation of the British experiments in terms of production of element 112.

or to let its scarce pool of highly qualified scientists, engineers, and technicians be wasted. Ways must be found to keep laboratories such as Brookhaven healthy and vigorously active for the long-range benefit of everyone.

Here and There

Claire Lamberti

R.W. Walton (Photog. & GA) has accepted a nomination for Councilor of the Society of Photographic Scientists and Engineers - N.Y. Chapter, beginning July 1, 1971.

Keith H. Thompson (Medical) was recently at the Walker Laboratory, Sloan-Kettering Institute at Rye, New York in order to discuss statistical analyses of mice tumor data with L.D. Hamilton (Medical) and members of the Sloan-Kettering staff.

Norb Dernbach (PR) recently returned from the Marshall Islands, where he and a documentary movie crew accompanied Dr. Conard's (Medical) survey team studying the effects of atomic fallout on the Islanders.

George A. Baker, Jr. (Applied Math) presented a talk entitled "Some Applications of the Padé Approximant in Physics" at Columbia University on February 22.

Andreas Kappas recently joined the staff of the Biology Department as Guest Research Associate. Dr. Kappas is affiliated with the Nuclear Research Center "Democritus" in Athens, Greece and is the recipient of an IAEA fellowship. He will work in association with Arnold H. Sparrow studying the effects of ionizing radiation on fungi or higher plants.

Pool and Gymnasium
Restrictions Listed

Admission to the Swimming Pool and Gymnasium will be granted only to: employees; members of employees' families (members of the same household); and, guests of above.

An employee or a family member will be permitted to bring no more than five guests per family. Employees or responsible family members must accompany and supervise their guests. If several employees bring a group of youngsters, they must accompany and supervise them in the Pool and Gym areas.

Persons may be denied the privilege of using the recreation facilities for improper conduct or abuse of the equipment.

Children of employees are not permitted in the Gym before 5 p.m. unless accompanied by an adult. The Gym will close each night at 9:30 p.m. and be closed on weekends.

Employee activity, organized or informal, has first priority in the Gym. Incidental visitor activity is only permitted when space is available and it does not interfere with employee activity.

The official schedule is posted in the Gym. This schedule is subject to revision, as required.

Admission through the Gates of the Laboratory to use the Swimming Pool and Gymnasium is controlled by the Security Office. However, members of employees' families are permitted to enter the Laboratory to use the Pool and Gym if they:

Are accompanied by an employee, or are in possession of a Season Pool Pass, or are in possession of a Temporary Identification Card issued by the Security Office.

Gymnasium Schedule

The Gymnasium is open evenings during the week until 9:30 p.m. for the following scheduled activities:

- Monday
5:00-7:00 p.m. Volleyball League (Mixed)
7:30-9:30 p.m. General Activities
- Tuesday
5:00-7:00 p.m. Judo Club
5:00-9:30 p.m. General Activities
- Wednesday
5:00-7:00 p.m. Volleyball League (Men)
7:30-9:30 p.m. General Activities
- Thursday
5:00-6:15 p.m. Judo Club
5:15-9:30 p.m. Basketball League
- Friday
5:00-7:30 p.m. Soccer League
7:30-9:30 p.m. Tennis (by posted self-service reservation)

Closed Weekends: The gymnasium will not be available for use on Saturdays or Sundays.

Cafeteria Menu

Week Ending March 18, 1971

- Friday, March 12
Manhattan Clam Chowder
Deep Fried Filet of Sole w/Tartar Sauce & French Fries .90
Sliced London Broil w/Mushroom Sauce & 1 Veg. .90
Broiled Halibut w/Lemon Butter & 1 Veg. .90
- Monday, March 15
Chicken & Rice Soup
Round Roast of Beef w/Gravy & 1 Veg. .85
Baked Chicken w/Rice & Mushrooms .75
Baked Stuffed Pepper & 1 Veg. .85
- Tuesday, March 16
Vegetable Soup
Boiled Franks w/Sauerkraut & Mashed Potatoes .80
Veal Pattie Parmagiana w/1 Veg. .85
Rolled Stuffed Cabbage w/1 Veg. .80
- Wednesday, March 17
St. Patrick's Day Special
Juice or Cup of Puree of Split Pea Soup
Choice of Irish Stew or
Corned Beef & Cabbage w/Boiled Potatoes
Choice of any 25¢ dessert
Served With Small Beverage \$1.30
- Thursday, March 18
Beef Barley Broth
Pot Roast of Beef a la mode w/1 Veg. .85
Chicken Patties w/Cream Sauce & 1 Veg. .80
Italian Spaghetti w/Meat Balls & Grated Cheese .75

Arrivals & Departures

Arrivals

Charles J. Kovacs.....Biology

Departures

Barbara Baldwin.....Staff Services

Winter Woodland Scene



This scene taken recently in the woods at Fahnestock Memorial State Park illustrates some of the primitive, natural beauty of fresh snow. The snow shoe tracks were made by an expedition of the BNL Mountain Club. The club conducts trips into the wilderness in all seasons of the year; from Mt. Katahdin and the Colorado Rockies in the winter, to the Fire Island beach and the caves of West Virginia in the summertime.
—Photo by V.W. Cohen

Volleyball News

Odelli Ozer

The coming week will be a critical one in the Men's League since the contest between the first place Spikers and the second place Atom Spikers should determine the championship of the second half. Previous encounters between these two teams have always turned out to be exciting and unpredictable. Although the Spikers lead this year's series 5-1, the Atom Spikers have been playing very well lately. The second game between Chemistry and the Bio-Meds should determine the ownership of third place. The Bio-Meds have further improved their prospects by recruiting Walt Reams.

The Mixed League Boomerangs remained undefeated and, with only three weeks remaining in the season, have practically clinched the championship. They had to contend however with the surprisingly strong opposition from the Spikers who, sparked by a few spectacular saves by Frank Short, Pat Oster and others, put up a valiant struggle.

The Volleyball Party is being scheduled for the evening of Monday, April 5. All active participants are urged to keep that date free.

The League standings on March 4 are as follows:

Men's League	Won	Lost
Spikers	11	1
Atom Spikers	10	2
Bio-Meds	5	7
Chemistry	4	8
Charlie Browns	0	12
Mixed League		
Boomerangs	12	0
Jets	7	5
Spikers	5	7
Misfits	0	12

Job Openings

The Physics Department of Western Illinois University is soliciting inquiries for the position of Professor of Physics. Research interests of the staff are: solid state physics, impurity and defect structure, electron spin resonance, low temperature; nuclear magnetic resonance; molecular and laser physics; S-matrix theory of multi-particle reaction; and general relativity.

The IAEA has announced an opening in Monaco for two years as Head, International Laboratory of Marine Radioactivity, Department of Research and Isotopes. Details available from the Office of Scientific Personnel.

Cooking Exchange

The next meeting of the Cooking Exchange will be held on Thursday, March 18, from 3 to 5 p.m. in the Apartment Area Recreation Building. Chinese food will be featured in the cooking demonstration.

A fee of \$.75 will be requested from each adult to help defray the cost of the demonstration and the babysitters.

Bowling News

Grace Fales

Red League

This was the week for 200 games as the fellows proved what they could do under stress. Ralph Nelson rolled 225/203 for a 618 scratch series, increasing his league high average to 187. Other highs were D. Stelmaschuk 205/203, J. Ferrante 212, J. Cain 206, G. Spira 204, W. Reams 204, J. Berech 203, D. Plows 204, C. Bachsmith 203, H. Marshall 201, and R. Wilson 200.

Green League

Neutrons are setting the pace for the second half with their lead of 12 points. Highs for the night - B. Danaher 202, H. Dawson 200, W. Crockett 222, and J. Scesny 244/201/636 scratch series.

Pink League

High games for the night were Bev Nine 183, Marge Stoeckel 182, Anne Kirkpatrick 175, and Mike Mayhew 168. Pinsplitters managed to retain their hold on first, while the Fiscal Assets took over "their" spot.

Frank Field Films At Medical



Nurse Mary Orlowski (left rear) and Chief nurse Ruth Korsos, go about their jobs while Dr. Lewis Dahl is being filmed by NBC News for a report narrated by Dr. Frank Field.



Dr. Frank Field interviews Dr. Harold Atkins about scanning procedures.

Dr. Bob Aronson gets an autograph from Dr. Frank Field, Science Editor and weatherman for WNBC-TV.

Gate Schedules

Main Gate

Authorized persons only may enter after 5 p.m. on regular working days, and on Saturdays, Sundays, and Laboratory holidays.

North Gate

Regular Working Days

Incoming Traffic:

7:00 a.m. - 9:30 a.m.
3:30 p.m. - 5:00 p.m.

Outgoing Traffic:

7:00 a.m. - 9:30 a.m.
3:30 p.m. - 6:30 p.m.

Other Hours: (Including Saturdays, Sundays and Laboratory Holidays)
Gate closed

South Gate

Regular Working Days

Incoming Traffic only:

7:00 a.m. - 9:00 a.m.

Outgoing Traffic only:

4:30 p.m. - 5:30 p.m.

Other Hours: (Including Saturdays, Sundays and Laboratory Holidays)
Gate closed

Slo-Break Basketball

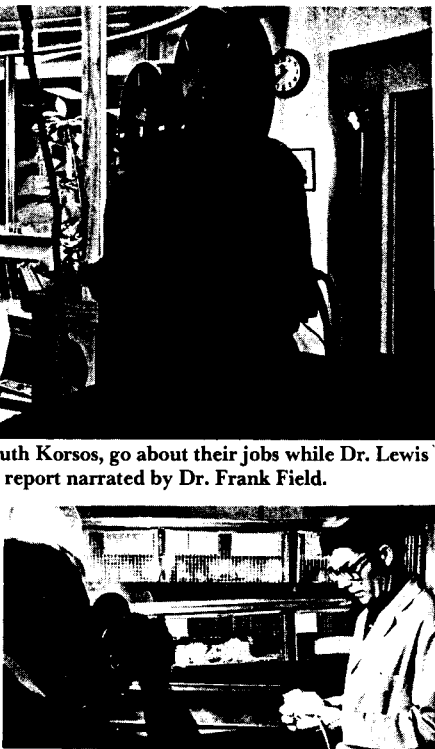
by George Latham

In Associated League action last Thursday night the Tandems lost their first game of the season, 38-29 to the Knacks. Bob Jansson lead the Knack attack with 15 points, J. Tyler scored 13 for the Tandems. Personnel downed AMD 42-33, behind Rowley's game high 19 points. McGonigal had 12 for AMD.

In the Universities League, Chem-Med remained undefeated in the second half, besting the Nationals 39-35. Darrel Joel scored 12 points for Chem-Med, Dick Sutter had 13 points for the Nationals. Biology outscored Physics 43-37 with Bill Studier hitting 17 for the winners, while Mayweather scored 18 for Physics.

The standings —

Associated League	Won	Lost
Knacks	4	0
Tandems	3	1
Personnel	2	2
Dirty Dozen	1	2
AMD	0	3
Universities League		
Chem-Med	5	0
Nationals	3	1
Biology	1	4
Physics	1	5



Ralph Tuttle holds one of a special strain of hypertension-prone rats for the NBC camera-man.



